Acquisition of Social Language Register

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by

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Abstract

Different people are spoken to in various ways depending on the social context. The term 'register' refers to the intonation used, as well as specific words and phrases used in these various conversations. It is important to discover how this capability is developed in children, as well as discovering the point of development at which this skill is acquired. Previous research suggests that children comprehend and use different registers by the time they enter elementary school (Ravid & Tolchinsky, 2002). Additionally, it is likely children are able to comprehend various registers before they correctly use language registers in their own speech. Three studies tested a total of 138 children (3-year olds, 4-year olds, and 5-year olds). Participants were shown a puppet and four photographs of different people: a teacher, a baby, a light-haired female peer, and a dark-haired female peer. Participants then listened to audio stimuli of the puppet asking questions to the people in the photographs in corresponding registers. The registers used were the formal register, informal register, and babytalk register. An additional stimulus was spoken in Spanish and used as a control. Participants were asked to identify the photograph with which it corresponded. In some cases, participants were asked to explain their reasoning behind the matches they chose. Overall, the results showed that 3-year olds were unable to correctly differentiate between various registers, 4-year-olds were more successful, and 5-year-olds could easily complete the task. However, based on the justifications of the 5-year olds' choices, it appeared that 5-year olds were unable to explain the differences between registers.

Imagine a trip to your local grocery store to purchase ingredients for your favorite meal. When it is your turn at the check out counter, the sales associate says, “Hi, how are you doing today?” Now, imagine that you respond to his question using the intonation and register you would use if speaking to a baby. This would include certain intonations in your voice, the words used, and the volume at which you speak. The sales associate would most likely be insulted, and the lady behind you would probably stare at you with a look of concern. This is an example of someone speaking in an incorrect register for this particular social context. A fundamental concept of human interaction is having the knowledge to speak to different people in different ways. The term ‘register’ refers to the type of language that is used in various social contexts. Two of the most important features of register are the intonation in one’s voice, and the words and phrases used when one speaks. This capability of using assorted language registers is essential to social interaction. It is inappropriate to speak to a doctor the way you would speak to your two-year-old niece; it would also be inappropriate to speak to your boss the way you speak to your best friend.

The skill of learning different registers is acquired at a young age; therefore, it is a pattern that is followed in adult life, generally without conscious effort (Roeper, 2007). Due to the fact that the ability to speak in the correct register is essential to human interaction, it is important to understand how this capability is developed and to discover the skills children must have in place before they obtain the capacity to use different registers. A great amount of language development is formed through social interactions. Children gain an array of knowledge about language in each social context they experience (Schieffelin & Ochs, 1992). However, understanding each particular social situation takes practice. Young kids are only beginning to

explore the world and therefore are limited in the amount of information they can process at one time (Andersen, 1992). Therefore, it is not a simple task for children to understand and speak in various social registers. In fact, the process of children acquiring the necessary information to learn about register use is fairly complex. Andersen (1992) suggests that there are three skills children need to possess in order to use registers. The first is referred to as ‘Linguistic tools’. Children must have a general understanding of language and how it works. For example, they must know that sometimes two words can refer to the same item such as ‘potty’ and ‘toilet’, and they must also be aware of various grammatical forms used to express the same action such as ‘Close the door’ as opposed to ‘Would you please close the door’. The second required skill is that kids must be aware of social differences. It is important that they understand the concept of social status, to some extent. It is also important that children understand the various social standings. For example, they must understand who their family is, who their friends are, who acquaintances, strangers, old people, and babies are. They must also understand what these different social standings mean. The third important ability is that children must understand the relationship between the first two skills in order to speak in different registers. They need to be conscious of the relationship between social interaction and language and thus, be able to combine these two sets of information together when they speak.

There are many different types of registers such the foreign talk register, teacher register, medical register, and many others, but not a single set of registers that is used by all. Many people respond to registers that they do not personally use when they speak. Most people are likely to speak in the registers most readily available to them based on their age, social status, occupation, sex, etc. These are the registers they hear most often (Andersen, 1992). Therefore, as children develop the ability to speak in different registers, they are likely to use those used by

their parents. Through listening to their parents, children slowly learn that registers differ between social contexts in the categories of power, authority, distance, politeness, and intimacy (Ravid & Tolchinsky, 2002).

The three commonly used registers that will be discussed in this paper include babytalk, formal register, and informal register. 'Babytalk' is also commonly called 'motherese,' which is the term used to describe the voice of a person speaking to a baby. Another common term to describe this phenomenon is "infant-directed speech" (Fernald, 1992). Babytalk includes exaggerated intonations in ones voice. It also includes specific words and phrases that are used when talking to babies such as "blankie" and "goo goo gaa gaa." Higher frequencies in speech are not the only characteristic of babytalk. It is believed by linguists that the high pitched intonations used aid in the child's development of language skills. Since mothers automatically speak to their babies with exaggerated intonations and simple words, it suggested that this type of speech helps to give babies pre-language skills in order to prepare them for speech later on (Fernald, 1992). Common components of babytalk include many repetitions of the child's name, and short utterances such as 'look!' and 'here!' (Andersen, 1992). It is suggested that this language of few words is helpful in that it reduces the context in which the language is used and therefore may help the child to distinguish meanings more readily (Andersen, 1992).

In the grocery store example at the beginning of this paper, it would have been appropriate to speak to the sales associate in an informal register if the speaker was familiar with this particular associate. The informal register is used among close friends and family. It is also commonly used when talking to people of a lower social status. When speaking in this register, phrases such as "how's it goin'" and "how are you doin'" are typically used. When the speaker does not need to be proper in speech, it is common for the speaker to drop the letter 'g' from the

end of his or her words. Children hear the informal register used in a variety of situations such as their parents speaking to friends, family members, and acquaintances. The formal register is used when speaking to a person who is unfamiliar, such as a doctor, a boss, or a person who is met for the first time. This register is also typically used when talking to people of a higher social status. Formal registers generally include an increased amount of polite language that is exchanged between two speakers. Words and phrases such as ‘please’ and ‘thank you’ are used often. Children may hear the formal register used when their parents speak to their bosses, doctors, and strangers. Parents may bring much attention to the formal register if they are meeting someone they want to impress and therefore want their kids to impress as well.

Since register use is an essential part of human conversation, it is important to find the point of development at which children gain the ability to understand the differences of register usage. The purpose of my research is to find this point of development. The use of register in children is highly correlated with their cognitive ability, and it is therefore critical that we learn exactly when this ability is developed in order to gain more insight into the cognitive abilities of young children. It is suggested by Ravid and Tolchinsky (2002) that the skills necessary to speak in various registers are developed by the time children enter elementary school. This means that kids should have the three skills reported by Anderson (1992) before they begin their primary schooling. There is, however, some debate in the fields of psychology and linguistics concerning the age at which this aptitude is obtained.

Andersen (1992) suggests that much like other types of language development, children gain this ability to speak in various registers at different rates, and that due to personality differences, this skill may be displayed earlier in some children, and later in others. The developmental point of register is slightly difficult to test due to personality differences in

children. Outgoing children will perform to their ability in a task that studies register knowledge, but shy children may not want to perform these tasks for the experimenter who is a stranger. The experimenter, therefore, is left unsure of whether or not that particular child does have the skill (Andersen, 1992). Moreover, it is further suggested that, “Register knowledge… extends beyond early markings of social relations to choice of advanced vocabulary and marked constructions in formal text production” (Ravid & Tolchinsky, 2002). This goes along with Andersen’s (1992) idea that children must have a general understanding of how language works. These lessons of language use are generally gained at different ages from child to child as well.

Further research suggests that preschool-aged children certainly do speak to different people using different registers. Shatz and Gelman (1973) conducted a study in which they discovered that four-year-old children were able to speak with various registers to different people. They had their participants describe a simple toy to peers of their own age, as well as to two-year-olds. It was found that the four-year-olds did cater their language differently to the two-year-olds. They spoke with shorter utterances and they used certain words to help keep the attention of the younger kids. The outcome of this demonstrates that the four year olds had Andersen’s (1992) three skills in place. By speaking with short utterances and simple words, they displayed knowledge of the general rules of language. By speaking to the younger kids in this manner, it was shown that they understood the social standing of the younger kids and the fact that their language rules had to be catered to match the listening abilities of the two year olds.

It is likely children understand various registers long before they are able to speak in different registers. The amount of knowledge about language and social relationships necessary to form these understandings is immense, and it is certainly probable that children may obtain

this amount of knowledge before they can actually implement the use of their knowledge. Therefore, if a child in a study is unable to speak in different registers, it should not be assumed that he or she is completely unaware of the fact that these language rules exist. “The co-ordination of all these pieces of knowledge is not an easy task for young children, who have more limited information-processing capacities than older children or adults” (Andersen, 1992). Andersen (1992) performed a study in which she had children role-play as a doctor and nurse in a doctor’s office, a mom or dad and their toddler, and as students and a teacher. Through this study it was found that based on children’s non-linguistic cues, they understood that some difference between registers exists, although they were not always able to fully play out these registers. In addition to this knowledge, a much greater amount is needed to fully understand language usage. Cognitive control of language is extremely important. Children need to understand linguistic forms, and the correct lexical expressions that are used (Ravid & Tolchinsky, 2002). This goes to further show the amount of linguistic intelligence that is needed to carry-out typical conversations in social situations.

An additional issue related to language acquisition in children is research concerning the way children interpret other languages. The way children understand languages helps researchers to understand, in greater detail, how children represent new social situations and the way children think about types of language they are not used to. It is suggested that young children understand that people of specific ages and occupations speak in distinct manners, but they have trouble understanding that people of different races or nationalities speak in completely different languages (Hirschfeld & Gelman, 1997). However, when shown pictures of people wearing unfamiliar clothing or living in an unknown dwelling, children were more likely to think that the people in these pictures spoke a foreign language as opposed to English. By learning the

knowledge children have of other languages, we gain extra insight as to how their thought process works when they hear communication exchanged in social situations.

It is suggested that children are able to speak in various registers before they begin school, although the point of absolute understanding has not yet been concretely discovered. My research aims to find a more salient age of register development, as well as explore the register comprehension children have in place before they speak with different registers. Due to the fact that three important skills are necessary for a child to contain before he or she can speak in different registers, it is highly likely that children obtain these skills long before they can personally use them.

In order to discover the point at which these skills are attained by children, I conducted three studies. Each is a variation of the following overview. Participants were shown photographs of a teacher, a baby, a child their own age, and a child from a different country. The participants were then shown a puppet and were told that the puppet was going to ask each person in the photographs the same question. Four different sound clips of the puppet's voice were then played one at a time. Each sound clip was spoken in a different register. After each clip was played, the child's task was to match the spoken register with the correct photograph of the person the puppet was speaking to.

Experiment 1

An experiment was designed to see how readily participants were able to identify photographs with their correct corresponding register sound file. Participants were asked to point to the corresponding photograph after hearing a sound file spoken by a puppet. In this experiment, the puppet asked "do you know where my ball is?" in different registers to the people in the

photographs. This was believed to be a good question because it was a way to make the participants feel like they were helping the puppet look for his ball. The question was simple so as not to confuse the youngest age group. While designing this experiment, it was also believed that a ball is an object that can be associated with all different types of people; from teachers to babies.

Methods

Participants:

The initial sample of participants consisted of 32 children. Two participants were dropped because they failed to meet pre-test requirements. An additional participant was dropped due to a diagnosis of autism. Another participant was dropped because of an experimenter error in making note of the condition. The final sample of participants consisted of 28 children. This sample was composed of 14 girls and 14 boys. Participants were divided into two age groups: A 3-year-old group with a mean of 41 months (range 37-47 months) and a 5-year-old group with a mean of 70 months (range: 50-103 months). There were 7 girls and 8 boys in 3-year-old group (N= 15) and 6 girls and 7 boys in the 5-year-old group (N=13). All participants were guests at the COSI Science Center. Verbal parental consent was obtained for each child. Children were given a hand stamp in appreciation for their participation.

Stimuli:

Test stimuli consisted of a set of four photographs and four statements on a computer. Each statement was spoken in a specific register to correspond with one of the photographs. Each photograph was approximately four inches wide by five inches long. One photograph contained a picture of a female teacher. Another photograph contained a picture of a light-haired female child. Another photograph contained a picture of a baby. The final photograph contained a

picture of a dark haired female child. All photographs of dark-haired female children in this experiment, as well as in Experiments 1 and 2 are pictured in a Latin American setting. The photographs of the girls were to serve as pictures of peers for the participants. See photographs in Figure 1. Furthermore, the computer contained the following four Quicktime sound files: 1) “Excuse me please; do you know where my ball is?” This corresponded with the picture of the teacher and was spoken in the formal register. 2) “Hi, do you know where my ball is?” This corresponded with the picture of the light haired female child and was spoken in the informal register. 3) “Awww, I wonder if you have my ball.” This corresponded with the picture of the baby and was spoken in the babytalk register. 4) “Hola, donde esta la pelota?” This corresponded with the picture of the dark haired female child and was spoken in Spanish. Additionally, a computer was used to show a picture of an orange puppet. See picture of puppet in Appendix A.

Figure 1:

QuickTime™ and
TIFF (Uncompressed) decor
are needed to see this pic

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Procedure:

Each session lasted about five minutes. The experiment was coded on-line by two additional experimenters for children in the younger age group, and the experiment was videotaped and coded off-line for the older age group. Each child sat on the floor next to the experimenter. The four photographs were laid out in a random order, in the shape of a square, directly in front of the child.

Pretest:

The purpose of the pretest was to make sure participants were able to identify the people in the photographs. Children were asked to point to the four pictures. First, children were asked to point to the picture of the teacher. Children were then asked to point to the baby. Next, children were asked to point to the picture of one of the little girls. When the child pointed to the picture of the light-haired girl, the experimenter said, “Yes, this little girl lives in Columbus.” The child was then asked to point to the other little girl. When the child pointed to the picture of the dark-haired girl, the experimenter said, “Yes, this little girl lives very far away from Columbus.” If the child pointed to the incorrect picture, they were asked again to point to that particular picture. If there were incorrect again, the experimenter would tell the child which picture was correct. There was then a final pretest in which the kids were again asked to point to the pictures once more in a randomized order. If they were not able to point to the correct photographs, their data was thrown out.

Test Phase:

The test phase began with the experimenter showing the child the picture of the puppet Moe on the computer. The experimenter then explained that Moe lost his favorite ball and would proceed to ask the four people in the photographs if they knew where his ball was. The sound clips were

played one at a time, each basically asking the same question, but in a different register to match up with one of the photographs. The children were told to listen very carefully to what Moe was saying and to point to the person in the photograph that they thought Moe was speaking to. The clips were played in a randomized, counter-balanced order. In this experiment, the dark-haired girl was last in each condition and used as a control. After each clip was played, the children were instructed to point to the picture of the person they thought Moe was speaking to. If the children were uncertain, the experimenter played the clip for them a second. If still uncertain, the children were asked to guess whichever picture they thought was correct. The experiment was then complete for the three year old group.

Five year olds:

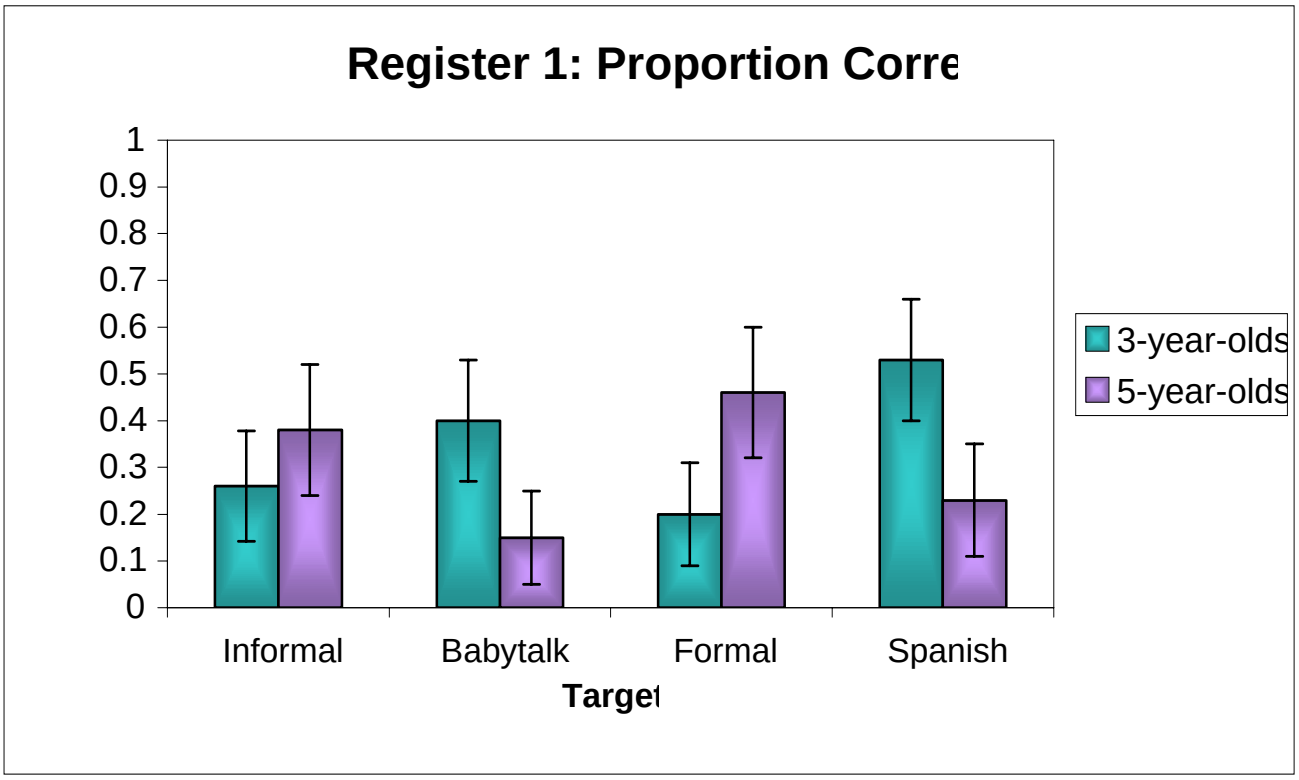
The five year old group completed the experiment above as well as two additional steps. These participants were videotaped and their responses were later transcribed. After the participants pointed to the photograph they thought to be correct, they were asked to explain their reasoning for choosing that particular picture. After all of the sound clips were complete, the subjects were asked to speak to the people in each photograph to determine if they were able to speak in the correct register. The experimenter took away all but one picture and ask the participant how he/she would ask the person in that photograph if she knew where Moe's ball is. The experimenter went through this step with each of the four pictures unless the participants refused to speak to the pictures. This was the final step in the experiment.

Results

The mean correct for each target, for each age group, is shown in Figure 2. A one-way ANOVA was conducted with age group as the independent variable and overall proportion correct as the dependent variable. There was no significant difference between the age groups (F

(1, 27) = 1.946, p>.05) so for all further analysis on overall proportion correct, the two age groups were collapsed into one. A one-sample t-test showed no significant effect in the participants' ability to carry out the task better than chance where chance was defined as .25 to reflect the four choice set up (t(27) = 1.611, p>.1). Moreover, additional t-tests on the proportion correct for each target register individually showed that children did not score above chance on any of the registers. It is then necessary to explore whether or not the participants carried out the task in any systematic manner. The order of rounds had a small effect on how often the correct pictures were chosen. In the first round, the teacher picture was selected correctly most often (33%). In the second round, the light-haried girl picture was chosen correctly most often (36%). In the third round, the light-haired girl and teacher pictures were chosen correctly most often (33%). In the fourth and final round, the picture of the dark-haired girl was chosen correctly most often. When the informal register was the target, the formal register was the most common response. When the babytalk register was the target, the babytalk register and Spanish were the most common responses. When Spanish was the target, Spanish was the most common response. When the formal register was the target, the infomral register was the most common response. Only a small amount of participants offered contentful justifications for their answers at the end of the experiment (N = 6). 83% of these justifications were of social reasoning, while the other 17% of these justifications were socially and language oriented.

Figure 2:



Discussion

Overall, Experiment 1 was not successful in its findings. The fact that all age groups were close to chance suggests there was something wrong with the task. Due to the fact the age differences were not found and differences between recognition of the various targets were not found, it seemed that participants were unable to interpret the task correctly. A likely reason is that participants interpreted the question more as, “Who is more likely to know where the ball is?” rather than “Who is Moe addressing to ask where the ball is?” The teacher was a common

answer. It would make sense that children think to ask an adult for help when they are looking for something. Also, the dark-haired girl was commonly mistaken for the baby during the pretest which is why photographs of older dark-haired girls were used in the following two experiments. These problems were rectified for Experiments 3 and 4. Only six participant justifications were included in the results of the experiment for a couple reasons. The primary reason is that many children would not participate in this section of the experiment. They were either too shy to talk, or said, “I don’t know.” Other reasonings given were not counted because they were starkly unrelated to the experiment.

Experiment 2

Experiment 2 is very similar to Experiment 1. One difference is that there were three age groups instead of two in order to discover age differences more accurately. Additionally, the question the puppet asked the people in the photographs changed. The new question was, "What is your name?" This question was spoken in various registers as in experiment 1. The question was changed to be more ambiguous across ages. Another change was that the dark-haired girl photograph was counter-balanced as opposed to being the last in each condition.

Methods

Participants:

The final sample of participants consisted of 72 children. Four participants were dropped because they did not pass the pretest, three were dropped due to experimenter error, and one was dropped because he or she exceeded the age limit. This sample has a total of 42 girls and 30 boys.

Participants were divided into three age groups: A 3-year-old group with a mean of 43 months (range: 37-47 months), a 4-year-old group with a mean of 55 months (range: 48-59 months), and a 5-year-old group with a mean of 71 months (range: 60-106 months). There were 13 girls and 9 boys in the 3-year-old group (N=22), 14 girls and 11 boys in the 4-year-old group (N=25), and 15 girls and 10 boys in the 5-year-old group (N=25). All participants were guests at the COSI Science Center.

Stimuli:

Three of the photographs used were the same as in Experiment 1. We replaced the photograph of the dark-haired girl with a photograph of an older looking dark-haired girl because in Experiment 1, participants commonly confused the dark-haired girl with the baby. See the new dark-haired girl photograph in figure 3. The four Quicktime sound files used were different and are as follows: 1) "Excuse me please, what is your name?" This corresponds with the picture of the teacher and is spoken in the formal register. 2) "Hi, what’s your name?" This corresponds with the picture of the light-haired child and is spoken in the informal register. 3) "Awww, what is your name?" This corresponds with the picture of the baby and is spoken in the babytalk register. 4) "Hola, como te llamas?" This corresponds with the picture of the dark-hair girl and is spoken in Spanish. Unlike experiment 1, a real puppet (a frog puppet) was used as these sound files were played. There was no longer a puppet on the computer.

Figure 3:

Procedure and Pretest:

Both the procedure and pretest are the same as in Experiment 1.

Test Phase:

The puppet's name in this experiment was Freddie. Freddie was shown to the participants. The experimenter explained that Freddie was lonely and wanted to make some new friends and would proceed to ask the four people in the pictures if they knew where his ball was. As in experiment 1, the sound clips were played one at a time and the participants were asked to point to the person in the photograph they thought Moe was speaking to.

Five year olds:

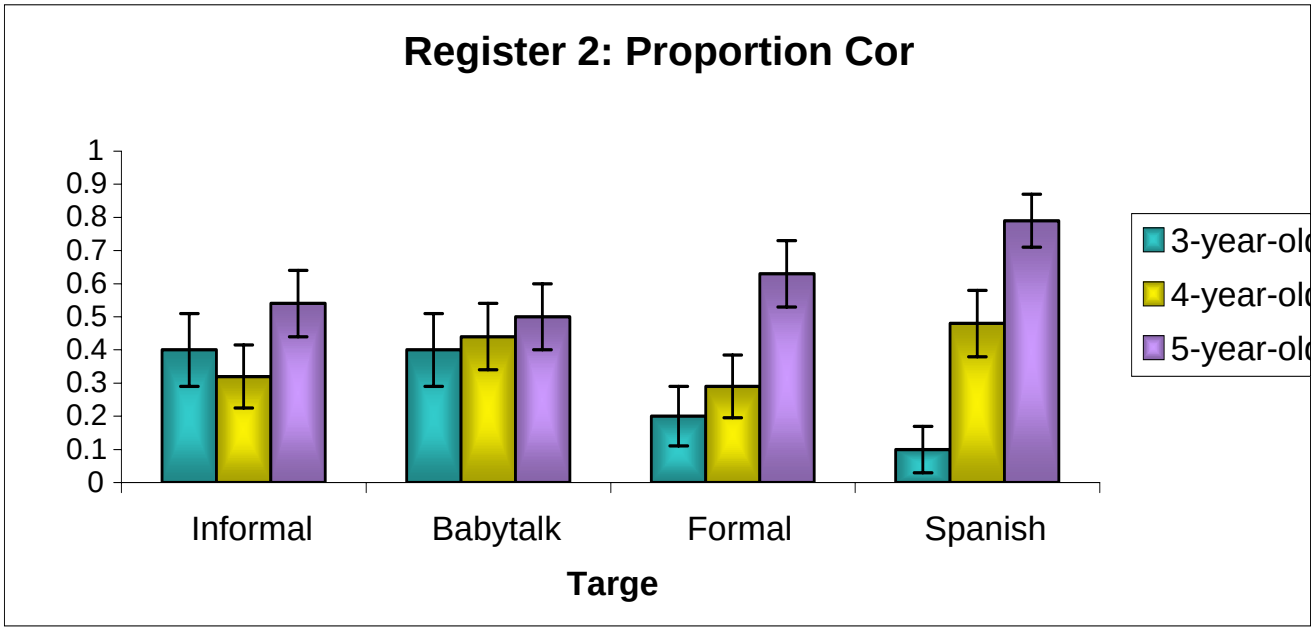
The five year old group did the same two additional steps as in experiment 1. They also were asked to justify their answers, and to ask the name of each pictured person themselves.

Results

The mean correct for each target, for each age group, is shown in Figure 4. One sample t-tests on proportion correct for each target reveals that participants were overall able to carry out the task

by selecting the correct targets. Chance was defined as .25 to reflect the four choice nature of the task. Participants succeeded overall with the informal target ($t(67) = 2.85$, $p<.01$), babytalk target ($t(67) = 3.30$, $p<.01$), Spanish target ($t(67) = 3.77$, $p<.001$), and formal register target ($t(67) = 2.229$, $p<.05$). One-way ANOVAs with age group as the independent variable and proportion correct as the dependent variable was conducted for each target. Age effects were not significant when the target was the informal register ($F(1, 67) = 1.25$, $p>.1$) or the babytalk register ($F(1,67) = .219$, $p>.1$). Age effects were significant when the target was Spanish ($F(1,67) = 14.354$, $p<.001$) and the formal register ($F(1,67) = 5.37$, $p>.01$). To find where the age differences occurred, a Post Hoc test, a Tukey test, was used. The tukey test showed significant effects ($p<.05$) across all age group levels when Spanish was the target. The three-year-olds did significantly worse than the four-year-olds, who did significantly worse than the five-year-olds. When the formal register was the target, significant effects were found between the five-year olds and the other age groups, but no significant effects were found between the two younger groups. No significant age effects were found when the informal register or the babytalk register were the targets. Of the justifications given (N = 25), 36% were socially oriented, 32% were language oriented, and 32% were a combination of both.

Figure 4:



Discussion

Experiment 2 overall succeeded in testing what it was designed to test. Participants were able to distinguish between the target pictures. Age effects showed that the ability to recognize registers associated with the dark-haired girl and teacher increased with age. With Spanish as the target, significant improvement was found between all age groups. With the formal register associated as the target, improvement was only significantly found between the 4-year-olds and 5-year-olds which may deal with the fact that 5-year-olds have more experience learning the importance of politeness. Neither 3-year-olds nor 4-year-olds were successful in recognizing the informal or babytalk registers. Overall, Five-year olds were very successful with the task, 4-year- olds were making improvement especially with Spanish and the formal register, and 3-years-olds were not able to successfully accomplish the task. One dilemma came from the four-choice nature of the task. Many children used the process of elimination as a strategy. Therefore, if a participant

incorrectly chose the baby in trial 1, but knew the baby was the correct target in trial 3, it was unlikely he or she were willing to choose the baby a second time. The justifications given were spread out almost equally between social reasoning, language reasoning, and a mix of the two. The results suggest that children use social and language cues fairly equally when distinguishing between differing registers.

Experiment 3

Experiment 3 is a replication of Experiment 2 with a few changes. This experiment was conducted in a research lab instead of at COSI which provided a more controlled environment. Additional photographs were used in order to create more conditions which consequently gave participants an increased amount of chances to correctly identify the sounds clips with the corresponding pictures. This helped to ensure that their responses were more reliable. Participants were only shown two photographs at a time instead of four in order to ensure that their responses were more reliable.

Methods

Participants:

The initial sample consisted of 36 participants. Two participants were dropped because they failed to meet pre-test requirements. The sample was composed of 18 girls and 16 boys. Participants were divided into three age groups: A three-year-old group with a mean of 41.5 months (range:37-47 months), a four-year-old group with a mean of 54.4 months (range:48-59 months), and a five-year-old group with a mean of 65.3 months (range: 60-73 months). There were 6 girls and 4 boys in the three-year-old group (N = 10), 6 girls and 6 boys in the four-year-

old group (N = 12), and 6 girls and 6 boys in the five-year-old group (N = 12). All participants were voluntary guests at the Developmental Language and Cognition Lab at the Ohio State University. Written parental consent was obtained for each child. Children were given a small prize in appreciation for their participation.

Stimuli:

The same four pictures were used as in Experiment 2 with an additional 8 pictures. Three additional pictures of babies, teachers, dark-haired girls, and light-haired girls were added. See the additional photographs in Appendix B. Participants sat at a table with the experimenter instead of on the floor.

Procedure:

Each session lasted about fifteen minutes. The experiment was video-taped and coded off-line for all age-groups. Each child sat at a table, next to the experimenter, in a private research room. The computer was placed in front of the experimenter with Freddie sitting behind it. The photographs were placed directly in front of the child.

Pretest:

The pretest began in the same manner as Experiments 1 and 2 but had an extra step. With the original four photographs laid out in front of the participant, the experimenter showed the participant the eight new photographs. See new photographs in Appendix 2. The experimenter held one new photograph at a time and explained to the participant that the new photographs would be placed in piles with similar looking old photographs. Participants were asked to point to the pile in which he or she thought the new photograph should be placed. If the participant was unsure, the experimenter simply placed the photograph in the correct pile. After all 12

photographs were placed in their corresponding pile, they were removed from the participants sight and placed next to the experimenter.

Test Phase:

As in Experiment 2, the experimenter explained that Freddie was lonely and wanted to make new friends. Then, only two photographs were placed in front of the participant at a time. The sound clips were played in a randomized, counter-balanced order and participants were to point to the photograph of the person they thought Freddie was speaking to. In trials 7-12, participants in all age groups were asked to explain their reasoning for choosing the particular photograph.

Additional Phase:

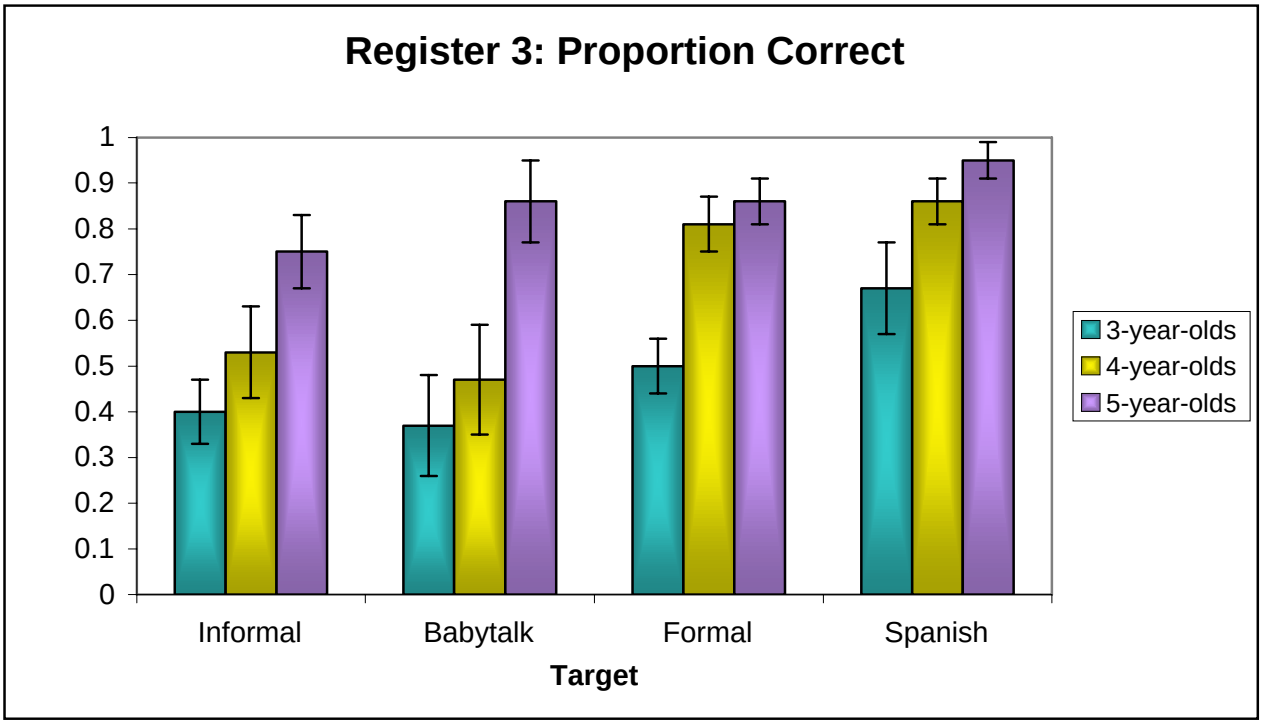
Much like the five-year-old group in Experiments 1 and 2, all age groups were asked to speak to the people in the photographs. The experimenter asked the participant to pick his or her favorite photograph of the group of babies, teachers, light-haired girls, and dark-haired girls one at a time. The chosen photograph was then placed in front of the participant. The experimenter then explained that there were some questions the child needed to ask the people in the photographs. Participants were told to ask the following questions to the people in the photographs one at a time: “Would you like something to eat?”, “Do you know what time it is?”, and “What is your favorite TV show?” This was the final step of the experiment.

Results

The mean correct for each target, for each age group, is shown in Figure 5. A repeated-measures ANOVA showed a main effect of age ($F(2,31) = 27.42$, $p<.001$) and a main effect of target ($F(2,31) = 6.95$, $p<.001$). The repeated-measures ANOVA showed no interaction between target

and age. A Post-hoc, Turkey HSD test showed that all age groups differed from each other ($p<.05$ for all). A paired-samples t-test was used to find differences between pairs of targets. We used a 99% confidence interval instead of a 95% confidence interval in order to be more conservative in our findings. The only non-significant difference found was the pairing of the light-haired girl with the Baby ($t(2, 31) = .114$, $p>.5$). The pairing of light-haired girl with the dark-haired girl was found to be most significant ($t(2, 31) = 4.73$, $p<.001$). The pairing of the light-haired girl with the teacher was significant ($t(2,31) = 2.46$, $p<.05$), the pairing of the baby with the dark-haired girl was significant ($t(2, 31 = 3.31$, $p<.05$), the pairing of the baby with the teacher was significant ($t(2, 31) = 2.22$, $p<.05$), and the pairing of the dark-haired girl with the teacher was significant ($t(2, 31) = 2.04$, $p<.05$). One-sample t-tests were used to compare each group to a chance level defined as 50%. No significant effects were found for age group 3 ($p>.1$ at all targets). Significant effects were found for age group four at the Spanish target ($t(2,31) = 7.39$, $p<.001$) and at the formal register target ($t(2,31) = 4.773$, $p=.001$). Significant effects were found for age group five at all targets. A significant effect was found at the informal register target ($t(2,31) = 3.03$, $p<.05$), babytalk register target ($t(2,31) = 4.18$, $p<.05$), Spanish target ($t(2,31) = 12.00$, $p<.01$), and at the formal register target ($t(2,31) = 7.39$, $p<.01$). Of the contentful justifications given ($N = 51$), 59% were language oriented, 18% were socially oriented, and 23% were a mixture of the two.

Figure 5:



Discussion

In Experiment 3 we found significant age effects, which signal that there is certainly a difference between the abilities of 3-year-olds, 4-year-olds, and 5-year-olds to recognize various spoken registers. This finding suggests that multiple steps are involved in reaching a full ability to distinguish between these registers since 4-year-olds could accomplish the task better than 3-year- olds, and 5-year-olds could accomplish the task better than 4-year-olds. The only non-significant target comparison in the pair wise task was between the light-haired girl and the baby. Interestingly, the light-haired girl paired with the dark-haired girl was the pairing with the strongest significance. This may suggest that the participants are confused on what to do with the light-haired girl. While 3-year-olds are only slightly above chance, a pattern is found in the ability of all ages to recognize certain targets. All age groups most easily recognize the dark-

haired girl followed closely by fairly easy recognition of the teacher. This suggests that the ability to distinguish between different languages is developed in children far before they are able to distinguish between various registers. Also, the 'additional phase' was added as a pilot study. The data is not fully analyzed at this time but it seems that 3-year-olds, 4-year-olds, and 5-year-olds all found this to be a difficult task. The justification results differed greatly in this experiment than in Experiment 2. The results suggests that children use languages cues more often than social cues when distinguishing between registers.

General Discussion

The preceding three experiments were designed to look at three primary questions: 1) what is the point of development at which children are able to distinguish between various language registers? 2) what registers do children understand first? 3) are children able to explain the reasoning behind registers? Overall, the experiments suggest that children are able to distinguish between various language registers around age 5. The experiments also show that children recognize different languages before they recognize different registers. Additionally, the experiments show that language cues and social cues are used to help children distinguish between registers, however, more research must be conducted to find whether social cues or language cues provide the most helpful information. Finally, it has also been found that children certainly are able to recognize register differences long before they can explain the differences. Some 4-year olds and most 5-year olds were able to complete the tasks at hand, although not even all of the 5-year olds were able to explain the reasoning behind their correct identifications of language registers. Therefore, there are intuitive, un-expressible reasons that lead young children, especially around the age of 5, to be able to recognize various registers.

The Experiments showed that the ability to distinguish between different registers begins developing at age 4 and is highly developed by age 5. Three-year-olds are not successful in identifying various registers. Therefore, there is some phenomena, or possibly multiple phenomena, that occur between the ages of 4 and 5 and lead to the development of this skill. It is highly likely that this development occurs around age 5 because of social reasons. As children get older, they are introduced to a larger variety of social situations. They begin new activities such as school, ballet class, tee ball and they therefore meet an increasingly larger array of people. They experience people of different professions and people of different social classes and nationalities. As a result, they both formally and subconsciously learn how various people are spoken to. The ability to recognize different registers may simply be due to the fact that 5-year-olds have been around longer and have therefore heard many more conversations. However, there may be a purely developmental language aspect that leads to this ability at age 5. Further experiments must be conducted to gain a greater understanding of the reasoning behind this developmental discovery.

An interesting aspect of Experiments 1, 2 and 3 has to do with the reasons explaining why Experiments 2 and 3 were successful but Experiment 1 was not. It is highly likely Experiment 1 failed because of the question Moe, the puppet, asked the people in the photographs. He asked the people if they knew where his ball was, whereas Freddie, the puppet in Experiments 2 and 3, asked the people what their names were. The question about the ball is less of a social question than the question about names. Generally, when a person asks another what his or her name is, it is intended to serve as an introduction; a way to get to know one another. However, when someone asks where their ball is, he or she is truly asking to find the whereabouts of his or her ball; not usually because he or she thinks this would be a good way to

start a conversation. If the reason 5-year olds are able to distinguish between registers comes from their greater social knowledge, they are likely to identify with the name question more readily. They may possibly think that it does not matter who Moe asks for her ball, as long as she eventually finds it. However, when Freddie asks for a person's name, it does matter who she's talking to, for people are spoken to in different ways. 5-year olds seem to be learning this concept.

Another interesting idea to investigate is the reasoning behind children's ability to correctly recognize certain registers over others. Children were more successful at identifying the dark-haired girl and teacher correctly as opposed to the baby and the light-haired girl. In all age groups, children were best able to recognize the Spanish sound clip associated with the dark-haired girl. As discussed before, this is because the Experiments show that children recognize other languages before they recognize register changes in their own language. Closely following the recognition of the dark-haired girl, 3-year olds, 4-year olds, and 5-year olds were all able to correctly identify the teacher fairly often. A possibility for this finding may be that children formally learn how to specifically speak to adults. Most parents do not sit their kids down and say, "you must talk to a baby using high-pitched words such as 'goo goo, gaa gaa'." However, many parents do purposely tell their kids, "always say please and thank you when speaking to an adult." Therefore, it is understandable that many of the participants easily recognized the words, "Excuse me please," that were associated with the teacher. This ability to recognize the formal register so easily may also be due to the fact that the age of adults is so far away from the age of these participants. They are certainly no longer babies and they do have some knowledge about babies, but from their perspective, there may be a greater self-viewed difference between themselves and teachers than between themselves and babies.

In future studies, it would be interesting to find out more about the differences between the two types of questions asked. Was it strictly because of social reasons that led to the children's inability to correctly accomplish the goals of Experiment 1? What if the question was about something else such as food. Food is a topic discussed more often than a ball, and is also commonly discussed in social situations. Or, what if the question was more personal, such as, "what is your favorite movie?" I tried to address these topics in the additional phase of experiment 3 when the participants were told to ask the three specific questions to the people in the pictures. As stated earlier, this was simply added as a pilot study but it was found that children were unable to accomplish the task at hand. It may simply be due to the fact that the participants found it silly to be talking to a person in a photograph. However, it is possible that children do not consciously think about speaking in the correct register. It may be an intuitive reaction while partaking in conversation but cannot be done on demand outside of a typical context. A further study could look at this issue by asking many different questions in many different ways and discovering patterns within the answers. Another interesting follow-up study would look at the social differences between babies, adults, and peers and seen from a young-child perspective. This would be conducted in order to gain a better idea of the reasons behind the children's inability to correctly identify the registers associated with the baby and the light-haired girl. This study could be conducted partly qualitatively by simply asking various questions to children about their social view of babies, adults, and peers. It would then be easier to form additional studies once a better idea is gained of how much information children already hold concerning these different people.

These three experiments showed that children develop the ability to distinguish between various social language registers around age 5. The experiments showed that the ability is slowly

developed up to that point, for 4-year olds were able to complete the task to some extent. Therefore, it is not an ability that develops overnight. The results also showed that children found it easier to recognize different languages than to distinguish between registers in his or her own language earlier in life, and that the formal register was understood the earliest of the three registers used in these experiments. The experiments also show the difficulty children had with justifying the reasons behind choosing particular registers. Therefore, it is suggested that children recognize various registers before they are able to understand why they are important. These experiments provide a strong framework for exploring the developmental issues behind social language register.

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